

# OLA DRAWINGS

## Gag\_AF110965\_BW\_mod

ATGGGCGCCCGCGCCAGCATCCTGCGCGGCGGAAGCTGGACGCCCTGGGAGCGCATCCGCC  
TGCGCCCGGGCGGAAGAAGTGTACATGATGAAGCACCTGGTGTGGCCAGCCGCGAGCT  
GGAGAAGTTGCCCTGAACCCCGCCCTGCTGGAGACCAGCGAGGGCTGCAAGCAGATCATC  
CGCCAGCTGCACCCGCCCTGCAGACCGGCAGCGAGGAGCTGAAGAGCCTGTTAACACCCG  
TGGCCACCCCTGTACTGCGTGCACGAGAAGATCGAGGTCCGCGACACCAAGGAGGCCCTGGA  
CAAGATCGAGGAGGAGCAGAACAGTGCAGCAGAAGATCCAGCAGGCCAGGCCGCCGAC  
AAGGGCAAGGTGAGCCAGAACTACCCCATCGTGCAGAACCTGCAGGGCCAGATGGTGCACC  
AGGCCATCAGCCCCCGCACCCCTGAACGCCCTGGGTGAAGGTGATCGAGGAGAAGGCCCTCAG  
CCCCGAGGTGATCCCCATGTTACCGCCCTGAGCGAGGGGCCACCCCCCAGGACCTGAAC  
ACGATGTTAACACCGTGGCGGCCACCAGGCCCATGCAGATGCTGAAGGACACCATCA  
ACGAGGAGGCCGCGAGTGGGACCGCGTGCACCCCGTGCACGCCGCCCATGCCCGG  
CCAGATGCGGAGCCCCCGGGAGCGACATGCCGGCACCAACAGCACCCCTGCAGGAGCAG  
ATCGCCTGGATGACCAGAACCCCCCATCCCCGTGGCGACATCTACAAGCGGTGGATCA  
TCCTGGGCTGAACAAGATCGTGCAGTGTACAGCCCCGTGAGCATCCTGGACATCAAGCA  
GGGCCCCAAGGAGGCCCTCCGCGACTACGTGGACCGCTTCAAGACCCCTGCCGCCGAG  
CAGAGCACCCAGGAGGTGAAGAACTGGATGACCGACACCCCTGCTGGTGCAGAACGCCAAC  
CCGACTGCAAGACCATCCTGCGCTCTGGCCCCGGCGCCAGCCTGGAGGAGATGAC  
CGCCTGCCAGGGCGTGGCGGCCAGCCACAAGGCCCGCTGCTGGCGAGGCCATGAGC  
CAGGCCAACACCAGCGTGTATGATGCGAGAACACTTCAAGGGCCCCGGCGCATCGTCA  
AGTGCTTCAACTGCGGCAAGGAGGGCCACATGCCCGCACTGCCGCCGCCGCAAGAA  
GGGCTGCTGGAAGTGCAGGCAAGGAGGGCCACAGATGAAGGACTGCACCGAGCGCCAGGCC  
AACTTCCCTGGCAAGATCTGCCAGCCACAAGGGCCGCCAGCTTCCGCTTCGAGGAGACCACCCCGGCCA  
GCCCGAGGCCACCGCCCCCGCCAGAGCTTCCGCTTCGAGGAGACCACCCCGGCCA  
GAAGCAGGAGAGCAAGGACCGCAGACCCCTGACCGCAGCCTGAAGAGCCTGTTGGCAACGAC  
CCCCTGAGGCCAGTAA

Figure 1

Gag\_AF110967\_BW\_mod

ATGGGCGCCCGGCCAGCATTCTGCGCGGCGAGAAGCTGGACAAGTGGAGAAGATCCGCC  
TGCAGCCCCGGCGGCAAGAAGCACTACATGCTGAAGCACCTGGTGTGGGCCAGCCGCGAGCT  
GGAGGGCTCGCCCTGAACCCCGGCCCTGCTGGAGACCGCCGAGGGCTGCAAGCAGATCATG  
AAGCAGCTGCAGCCCGCCCTGCAGACCGGCACCGAGGAGCTGCGCAGCCTGTACAACACCG  
TGGCCACCCCTGTACTGCGTGCACGCCGCATCGAGGTCCGCGACACCAAGGAGGCCCCCTGGA  
CAAGATCGAGGAGGAGCAGAACAAAGTCCCAGCAGAAGACCCAGCAGGCCAAGGAGGCGAC  
GGCAAGGTGAGCCAGAACTACCCCATCGTGCAGAACCTGCAGGGCCAGATGGTGCACCAGG  
CCATCAGCCCCCGCACCCCTGAACGCCCTGGGTGAAGGTGATCGAGGAGAAGGCCTTCAGCCC  
CGAGGTGATCCCCATGTTACCGCCCTGAGCGAGGGGCCACCCCCCAGGACCTGAACACG  
ATGTTGAACACCGTGGCGGCCACCAGGCCCATGCAGATGCTGAAGGACACCATCAACG  
AGGAGGCCGCGAGTGGACCGCCTGCACCCCGTGCAGGCCGGCCCCGTGGCCCCCGGCCA  
GATGCGCGACCCCCCGCGCAGCGACATGCCGGGCCACCGACCCCTGCAGGAGCAGATC  
GCCCTGGATGACCAGCAACCCCCCGTGCCTGGCGACATCTACAAGCGGTGGATCATCC  
TGGGCCTGAACAAGATCGTGGATGTACAGCCCCGTGAGCATCCTGGACATCCGCCAGGG  
CCCCAAGGAGCCCTCCCGCACTACGTGGACCGCTTCTCAAGACCCCTGCAGGCCAGCAG  
GCCACCCAGGACGTGAAGAACTGGATGACCGAGACCCCTGCTGGTGCAGAACGCCAACCCG  
ACTGCAAGACCATCCTGCAGCTCTGGCCCCGGGCCACCGTGGAGGAGATGATGACCGC  
CTGCCAGGGCGTGGCGGCCGGCACAAGGCCCGTGCTGGCCGAGGCATGAGCCAG  
GCCAACAGCGTGAACATCATGATGCAGAAGAGCAACTTCAAGGGCCCCGGCGAACGTCA  
AGTGCTTCAACTGCGGCAAGGAGGGCCACATGCCAAGAACTGCCGCCCCCCGCAAGAA  
GGGCTGCTGGAAGTGCAGGCAAGGAGGGCCACCGAGATGAAGGACTGCACCGAGGCCAGGCC  
AACTTCTGGGCAAGATCTGGCCAGCCACAAGGGCCGGCAACTTCTGCAGAACCC  
GCAGCGAGCCCGCCGCCCCCACCGTGCCTGCCACCGCCCCCGGCCAGAGCTTCCGCTCGA  
GGAGACCAACCCCCGCCCAAGCAGGAGCCAAAGGACCGCGAGCCCTACCGCGAGCCCCCTG  
ACCGCCCTGCAGGCCCTGTTGGCAGCGGCCCTGAGCCAGTAA

Figure 2

**Fig. 3**

**Env\_AF110968\_C\_BW\_opt**

--> **signal peptide (1-81)**  
ATGCCGCTGATGGGCATCCTGAAGAACCTACCAAGCAGTGGTGGATGTGGGCATCTGGCTTCTGGATGCTGATCA  
\\--> **gp120/140/160 (82)**  
TCAGCAGCGTGGTGGCAACCTGTGGGTGACCGTGTACTACGGCGTGCCTGTGGAAGGAGGCCAAGACCACCC  
GTTCTGCACCAGCGACGCCAACGGCTACGAGACCGAGGTGCACAACCGTGTGGGCCACCCACGCCCTGCGTGCCTGCCACC  
GACCCCAACCCCCAGGAGATCGTGTGGAGAACGTGACCGAGAACCTCAACATGTGGAAGAACGACATGGTGGACC  
AGATGCACGAGGACATCATCAGCCGTGGGACCAGAGCCTGAAGCCCTGCGTAAGCTGACCCCCCTGTGCGTGAC  
CCTGAAGTGCCTGACCGAACAGCAACAGCAACACATCAACACCATGATCGACAACAGCAACAAGGGCGAGATGAAG  
AACTGCAGCTTCAACGTGACCAACCGAGCTGCGCGACCGCAAGCAGGAGGTGCACGCCCTGTTCTACCGCCTGGACG  
TGGTGCCTGAGGGCAACAAACAGCAACAGAGTACCGCCTGATCAACTGCAACACCAGCGCCATACCCAGGCC  
CCCCAAGGTGAGCTTCGACCCCATCCCCATCCACTACTGCACCCCCCGCCGGTACGCCATCCTGAAGTGCACAAAC  
CAGACCTCAACGGCACCGGCCCTGCAACAAACGTGAGCAGCGTGCAGTGCGCCACGGCATCAAGCCGTGGTGA  
GCACCCAGCTGCTGTAACGGCAGCCTGGCCAAGGGCGAGATCATCATCCGCAAGCGAGAACCTGGCAACAAACGC  
CAAGATCATCATCGTGCAGCTGAACAAGCCGTGAAGATCGTGTGCGTGCCTGCAACAAACACCCGCAAGAGC  
GTGCGCATCGGCCCCGGCCAGACCTCTACGCCACCGGGCAGATCATCGCGACATCGGCCAGGCCACTG  
TCAACAAGACCGAGTGGAACAGCACCTGCAGGGCGTGAAGAACGACTGGAGGAGCACTTCAGCAAGAACGCCAT  
CAAGTTCGAGCCCAGCAGCGCGGCGACCTGGAGATCACCACCCACAGCTTCAACTGCCCGGGGAGTTCTTCTAC  
TGCGACACCAGCCAGCTGTTCAACAGCACCTACAGCCCCAGCTTCAACGGCACCGAGAACAGCTGAACGGCACCA  
TCACCATCACCTGCCCATCAAGCAGATCATCAACATGTGGCAGAACGGTGGGCCGCATGTACGCC  
CGCCGGCAACCTGACCTGGAGAGCAACATCACCGGCTGCTGCTGACCCGCGACGGCGGCAAGACCGGGCCCAAC  
GACACCGAGATCTCCGCCCCGGCGCGACATGCGCAACACTGGCGAACGAGCTGTACAAGTACAAGGTGG  
TGGAGATCAAGCCCTGGCGTGGCCCCACCGAGGCCAAGCGCCGCGTGGTGGAGCGCGAGAACGCCGCGTGG  
CATCGCGCCGTGTTCTGGCTTCTGGCGCCGCCGGCAGCACCATGGCGCCGCCAGCATCACCTGACCGTG  
CAGGCCCGCTGCTGCTGAGCGGCATCGTGCAGCAGCACAAACCTGCTGCGGCCATCGAGGCCAGCAGCACC  
TGCTGCAGCTGACCGTGTGGGCATCAAGCAGCTGCAGACCCGATCCTGGCCGTGGAGGCCACTG  
GCAGCTGCTGGCATCTGGGCTGAGCGCAAGCAGCTGATCTGCACCAACCGCCGTGCCCTGGAACAGCAGCTGGAGC  
AACCGCAGCCACGACGAGATCTGGACAACATGACCTGGATGCAGTGGACCGCGAGATCAACAACACCCGACA  
CCATCTACCGCCTGCTGGAGGAGGCCAGAACCGAGCAGGAGAACGAGAACGGACCTGCTGCCCTGGACAGCTG  
gp140 (2025) <--\\>  
GCAGAACCTGTGGAACTGGTTCAGCATCACCAACTGGCTGTGGTACATCAAGATCTTACATGATCGTGGCGGC  
CTGATGCCCTGCGCATCATTCGCGTGTGAGCATCGTAACCGCGTGCCTGCCAGGGCTACAGCCCTGCC  
TCCAGACCCCTGACCCCAACCCCCCGAGCCGGACCGCCCTGGCCATCGAGGAGGAGGGCGGCGAGCAGGACCG  
CGGCCGCGACATCCGCTGGTGGCGCTTCTGGCCCTGGCGACCTGCGCAGCCTGTGCCCTGTTCA  
TACCAACCGCTGCGGACTTCATCCTGATCGCCGCCCGTGTGGAGCTGCTGGGCCAGCGCGCTGGAGGCC  
TGAAGTACCTGGCAGCCTGGTGCAGTACTGGGCCTGGAGCTGAAGAACAGGCCATCACGCCCTGCTGGACACC  
CGCCATCGCGTGGCGAGGGCACCGACCGCATCGAGTTCATCCAGCGCATCTGCCGCCATCCGCAACATC  
CCCCGCCATCCGCCAGGGCTCGAGGCCGCCCTGCGACTAA  
gp160, gp41 (2547) <--\\>

Fig. 4

**Env\_AF110975\_C\_BW\_opt**

--> signal peptide (1-72) \-->  
ATGCGCGTGCAGCGCATCCTGGCAGCTGGCAGCAGTGGTGGATCTGGGATCCTGGGCTCTGGATCTGCAGCG  
gp120/140/160 (72) \-->  
GCCTGGGCAACCTGTGGGTGACCGTGTACGACGGCGTCCCCGTGGCGCAGGCCAGCACCCCTGTTCTGC  
CAGCGACGCCAAGGCCTACGAGAAGGAGGTGCACAACGTGTGGGCCACCCACGCCCTGCGTGGCCACCGACCCCAAC  
CCCCAGGAGATCGAGCTGGACAACGTGACCGAGAACTTCACATGTGGAGAACGACATGGTGGACCAGATGCACG  
AGGACATCATCAGCCGTGGGACCAGAGCCTGAAGCCCCCGGTGAAGCTGACCCCCCTGTGCGTGACCCCTGAAGTG  
CACCAACTACAGCACCAACTACAGCAACACCATGAACGCCACCAGCTACAACAACACCAACCGAGGAGATCAAG  
AACTGCACCTTCAACATGACCACCGAGCTGGCGACAAGAACGAGCAGCAGGTGTACGCCCTGTTCTACAAGCTGGACA  
TCGTGCCCTGAACAGCAACAGCAGCGAGTACCGCCTGATCAACTGCAACACCAGCGCATCACCCAGGCC  
CAAGGTGAGCTCGACCCATCCCCATCCACTACTGCGCCCCCGCCGGTACGCCATCCTGAAGTGAAGAACAAAC  
ACCAGCAACGGCACCGGCCCCCTGCCAGAACGTGAGCACCCTGCAGTGCACCCACGGCATCAAGCCGTGGTGGACA  
CCCCCTGCTGCTGAACGGCAGCCTGGCCGAGGGCGGGAGATCATCATCCGAGCAAGAACCTGAGCAACAACGC  
CTACACCATCATCGTCACCTGAACGACAGCGTGGAGATCGTGTGCACCCGCCCCAACAAACAACACCCGCAAGGGC  
ATCCGCATCGGCCCCGGCCAGACCTTCTACGCCACCGAGAACATCATCGGCACATCCGCCAGGCCACTGCAACA  
TCAGGCCGGGAGTGGAAACAAGGCCGTGCAGCGCGTGGAGCAGCTGCCAGCAGCTGGCCAGCACTTCCCAACAAGACCAT  
CGAGTTCCAGCCCAGCAGCGGGCGACCTGGAGATCACCACCCACAGCTTCAACTGCCGGCGAGTTCTTCTAC  
TGCAACACCAAGCTGTTAACAGCAGCTAACACGGCACCAAGCTACCGCCGGACCGAGAGCAACAGCAGCATCA  
TCACCCCTGCCCTGCCCATCAAGCAGATCATGACATGTGGCAGAACGGTGGCCGCGCATCTACGCC  
CGAGGGCAACATCACCTGCAGCAGCAGCATACCGCCGTGCTGGCCCGCGACGGCGCCCTGGACAACATCACC  
ACCGAGATCTCCGCCCCCAGGGCGGGGACATGAAGGACAACCTGGCGAACCGAGCTGTACAAGTACAAGGTGGTGG  
gp120(1509) <--\-->(1510) gp41  
AGATCAAGCCCTGGCGTGGCCCCACCGAGGCCAACGCGCCGCGTGGTGGAGCGCGAGAACGCGCCGCGCAT  
CGGCCGCGTGTCTGGCTGGCCCGCAGCAACATGGCGCCGCCAGCATCACCCCTGACCGCCAG  
GCCCGCCAGCTGCTGAGCGGCATCGTCAGCAGCAGAACCTGCTGCCGCCATCGAGGCCAGCAGCACATGC  
TGCAGCTGACCGTGTGGGCATCAAGCAGCTGCAGGCCCGCGTGTGGCCATCGAGCGTACCTGAAGGACCAAGCA  
GCTGCTGGCATCTGGGCTGCAGCGCAAGCTGATCTGACCAACCCCGTGCCTGGAAACAGCAGCTGGAGCAAC  
AAGACCCAGGGCGAGATCTGGGAGAACATGACCTGGATGCAGTGGACAAGGAGATCAGCAACTACACCCGATCA  
TCTACCCGCTGCTGGAGGAGGCCAGAACACCAGCAGGAGCAGAACGAGAAGGACCTGCTGGCCCTGGACAGCCGAA  
gp140(2022) <--\-->  
CAACCTGTGGAGCTGGTCAACATCAGCAACTGGCTGTGGTACATCAAGATCTTCACTGATGTGGCC  
ATCGGCCCTGCCATCATCTGCCGTGCTGAGCATCGTAACCGCGTGGCCAGGGCTACAGCCCCCTGAGCTTCC  
AGACCCCTGACCCCAACCCCGCGGCCCTGGACCGCCTGGCCGCGATCGAGGAGGAGGGCGGGAGCAGGACCGCGA  
CCGCAGCATCCGCCCTGGTGCAGGGCTTCCCTGGCCCTGGCCTGGACGACCTGCCAGCCTGTGCCTGTTCA  
CACCGCCCTGCCGACCTGATCTGGTACCGCCCGTGGAGCTGCTGGCCCGAGCAGCCCCCGCGGCC  
AGCGCGGCTGGAGGCCCTGAAGTACCTGGCAGCCTGGTGCAGTACTGGGCCCTGGAGCTGAAGAACGCGCCAC  
CAGCCTGTGGACAGCATGCCATGCCGTGGCCAGGGCACCGACCGCATCGAGGTGATCCAGGCCATCTAC  
gp160, gp41(2565) <--\-->  
CGCGCCTCTGCAACATCCCCCGCGCGTGGCCAGGGCTCGAGGCCGCCCTGCAGTAA

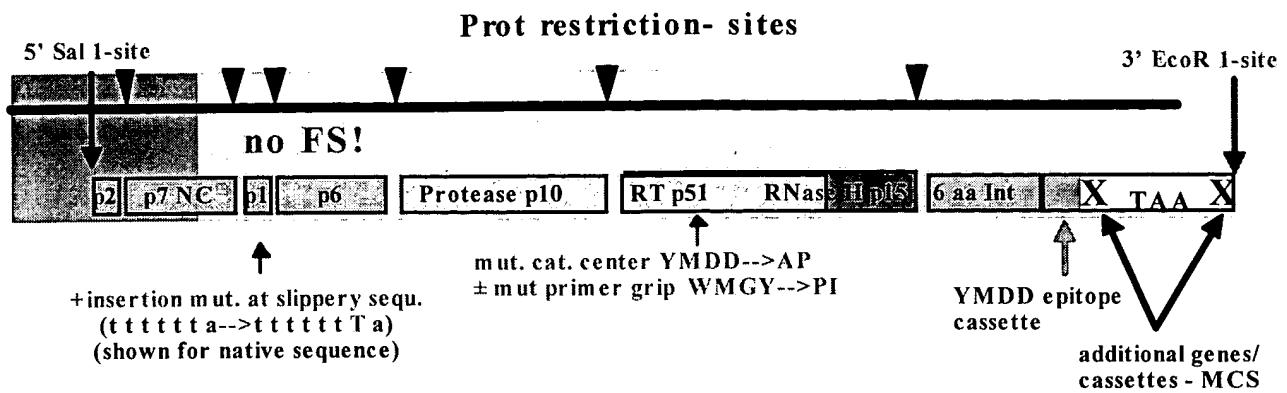
Gag\_AF110965\_BW\_opt

ATGGGCGCCCGCGCCAGCATCCTGCGCGGGCAAGCTGGACGCCCTGGAGCGCATCCGCCTGCGCCCCGG  
CGGCAAGAAGTGCTACATGATGAAGCACCTGGTGTGGGCCAGCCGGAGCTGGAGAAGTTCGCCCTGAACC  
CCGGCCTGCTGGAGACCAGCGAGGGCTGCAAGCAGATCATCCGCCAGCTGCACCCGCCCTGCAGACCGGC  
AGCGAGGAGCTGAAGAGCCTGTTAACACCCGTGGCCACCCCTGTACTGCGTGCACGAGAAGATCGAGGTCGG  
CGACACCAAGGAGGCCCTGGACAAGATCGAGGAGGAGCAGAACAAAGTGCCAGCAGAACAGATCCAGCAGGCCG  
AGGCCGCCACAAGGGCAAGGTGAGCCAGAACTACCCCATCGTGCAGAACCTGCAGGGCCAGATGGTGCAC  
CAGGCCATCAGCCCCCGCACCCCTGAACGCCCTGGTGAAGGTGATCGAGGAGAACGCCCTCAGCCCCGAGGT  
GATCCCCATGTTCACCGCCCTGAGCGAGGGGCCACCCCCCAGGACCTGAACACCCATGCTGAACACCGTGG  
GCGGCCACCAGGCCATGCAGATGCTGAAGGACACCATCAACGAGGAGGCCCGAGTGGGACCGCGTG  
CACCCCGTGCACGCCGGCCCATGCCCGGCCAGATGCGCGAGCCCCGCCAGCGACATGCCGGCAC  
CACCAAGCACCCCTGCAGGAGCAGATGCCCTGGATGACCAGCAACCCCCCATCCCCGTGGGACATCTACA  
AGCGCTGGATCATCCTGGCCTGAACAAGATCGTGCCTGATGTACAGCCCCGTGAGCATCCTGGACATCAAG  
CAGGGCCCAAGGAGCCCTCCCGCACTACGTGGACCGCTTCAAGACCCCTGCGCGCCAGCAGAGCAC  
CCAGGAGGTGAAGAACTGGATGACCGACACCCCTGCTGGTGCAGAACGCCAACCCGACTGCAAGACCATCC  
TGCCTGCCTGGCCCCGGCGCCAGCCTGGAGGAGATGATGACCGCCCTGCCAGGGCGTGGCGCCAGC  
CACAAAGGCCCGCGTGCCTGGCGAGGCCATGAGCCAGGCCAACACCAGCGTATGAGAACAGCAACTT  
CAAGGGCCCCGGCGCATCGTGAAGTGCCTCAACTGCCGAAGGAGGGCACATGCCCGCAACTGCCCG  
CCCCCGCAAGAAGGCTGCTGGAAAGTGCCTGCCAGGAGGGCACCAAGATGAAGGACTGCAACGCCAG  
GCCAACTTCTGGCAAGATCTGCCAGCCACAAGGCCGCCAGCAACTTCTGCAGAGGCCGCCAG  
GCCCAACCGCCCCCCCCCGCGAGAGCTTCCGCTTCGAGGAGACCACCCCGGCCAGAACAGCAGGAGAGCAAGG  
ACCGCGAGACCCCTGACCGCCCTGAAGAGCCTGTTGGCAACGACCCCTGAGCCAGTAA

Figure 5

Gag\_AF110967\_BW\_opt  
ATGGGCGCCCGGCCAGCATCCTGGCGGGAGAAGCTGGACAAGTGGGAGATCCGCCTGCGCCCGG  
CGGCAAGAAGCACTACATGCTGAAGCACCTGGTGTGGCCAGCCCGAGCTGGAGGGCTTCGCCCTGAACC  
CCGGCCTGCTGGAGACCGCCGAGGGCTGCAAGCAGATCATGAAGCAGCTGCAGCCGCCCTGCAGACCCGGC  
ACCGAGGAGCTGCGCAGCCTGTACAACACCGTGGCCACCCGTACTGCGTGCACGCCGGCATCGAGGT[GCG  
CGACACCAAGGAGGCCCTGGACAAGATCGAGGAGGAGCAGAACAG[GCGCAGCAGAACAGGCCAGCAGGCCA  
AGGAGGCCAGGGCAAGGTGAGCCAGAACTACCCATCGTGCAGAACCTGCAGGGCCAGATGGTGCACCAG  
GCCATCAGCCCCCGCACCTGAACGCCTGGGTGAAGGTGATCGAGGAGAAGGCCCTCAGCCCCGAGGTGAT  
CCCCATGTTACCGCCCTGAGCGAGGGGCCACCCCCCAGGACCTGAACACCATGCTGAACACCGTGGGCG  
GOCACCAGGCCATGCAGATGCTGAAGGACACCATCAACGAGGAGGCCAGTGGGACCGCCTGCAC  
CCCGTGCAGGCCGGCCGGGTGGCCCCGGCCAGATGCGGACCCCCGGCAGCGACATGCCGGCAGCAC  
CAGCACCCCTGCAGGAGCAGATGCCCTGGATGACCAGCAACCCCCCGTGCCTGGGACATCTACAAGC  
GCTGGATCATCCTGGGCCTGAACAAGATCGTGC[GCGATGTACAGCCCCGTGAGCATTGGACATCCGCCAG  
GGCCCCAAGGAGCCCTCCCGACTACGTGGACCGCTTCTCAAGACCCCTGCCGCCAGCAGGCCACCCA  
GGACGTGAAGAACTGGATGACCGAGACCCCTGCTGGTGCAGAACGCCAACCCCCACTGCAAGACCATCTGC  
GCGCCCTGGCCCCGGGCCACCCCTGGAGGAGATGATGACCGCCTGCCAGGGGTGGGGCCGGCCAC  
AAGGCCCCGCTGGCCGGAGG[GCGATGAGCCAGGCCAACAGCGTGAACATCATGATGCAGAACAGCAACTT  
CAAGGGCCCCGGCAACGT[GAGTGCCTCAACTGCCAGGAGGGCCACATGCCAACAACTGCCGCG  
CCCCCGCAAGAAGGGCTGCTGGAAGTGGCAAGGAGGGCCACAGATGAAGGACTGCACCGAGGCCAG  
GCCAACCTGGCAAGATCTGGCCAGCCACAAGGGCCGCCGGCAACTTCCCTGCAGAACCGCAGCGA  
GCCCGCCGCCCGACCGTGCACCGCCCCCGCCAGAGCTTCCGCTTCGAGGAGACCAACCCCGCC  
CCAAGCAGGAGCCCAAGGACCGCGAGCCCTACCGCAGCCCTGACCGCCCTGCCAGGCTGTTGGCAGC  
GGCCCCCTGAGCCAGTAA

Figure 6



**FIGURE 7**

PR975(+) (SEQ ID NO:30)

GTCGACGCCACCATGGCCGAGGCCATGAGCCAGGCCACCAGCGCCAACATCCTGAT  
GCAGCGCAGCAACTTCAAGGGCCCCAAGCGCATCATCAAGTGCTCAACTGCGGCAA  
GGAGGGCCACATGCCCGCAACTGCCGCCCGCAAGAAGGGCTGCTGGAAGT  
GCGCAAGGAGGGCCACCGAGATGAAGGACTGCACCGAGCGCCAGGCCAACTTCTTC  
CGCGAGGACCTGGCTTCCCCAGGGCAAGGCCCGAGTTCCCCAGCGAGCAGAA  
CCGCGCCAACAGCCCCACCAGCCGCGAGCTGCAGGTGCGCGGCGACAACCCCCGCA  
GCGAGGCCGGCGGCCAGGCCAGGGCACCTGAACCTCCCCAGATCACCCGTG  
AGCGCCCCCTGGTGAGCATCAAGGTGGCGGCCAGATCAAGGAGGCCCTGCTGGAC  
ACCGGCCGACGACACCGTGTGGAGGAGATGAGCCTGCCGGCAAGTGGAAAGCC  
CAAGATGATCGGCGGCATGGCGCTTCATCAAGGTGCCAGTACGACCAAGATCCT  
GATCGAGATCTCGGCAAGAAGGCCATCGGCACCGTGTGATCGGCCAACCCCCGT  
GAACATCATCGGCCAACATGCTGACCCAGCTGGCTGCACCCGAACCTCCCCAT  
CAGCCCCATCGAGACCGTGCCGTGAAGCTGAAGGCCGATGGACGGCCCCAAGG  
TGAAGCAGTGGCCCTGACCGAGGAGAAGATCAAGGCCCTGACCGCCATCTGCGAG  
GAGATGGAGAAGGAGGGCAAGATCACCAAGATCGGCCCGAGAACCCCTACAACAC  
CCCCGTGTCGCCATCAAGAAGAAGGACAGCACCAAGTGGCGCAAGCTGGTGGACT  
TCCCGAGCTGAACAAGCGCACCCAGGACTTCTGGAGGTGCACTGGGATCCCC  
ACCCCGCCGGCTGAAGAAGAAGAAGAGCGTGACCGTGCTGGACGTGGCGACGCC  
TACTTCAGCGTGCCCTGGACGAGGACTTCGCAAGTACACCGCCTCACCATCCCC  
AGCATCAACAACGAGACCCCCGGCATCCGCTACCAAGTACAACGTGCTGCCAGGGC  
TGGAAAGGGCAGCCCCAGCATCTCCAGAGCAGCATGACCAAGATCCTGGAGGCC  
CGCGCCCGCAACCCCGAGATCGTGTACCGTACATGGACGACCTGTACGTGGGC  
AGCAGACCTGGAGATCGGCCAGCACCGGCCAAGATCGAGGGAGCTGCGCAAGCACCT  
GCTGCGCTGGGCTTACCAACCCCCGACAAGAACGACCAAGAGGCCCTTCC  
GTGGATGGGCTACGAGCTGCACCCCGACAAGTGGACCGTGCAGCCATCGAGCTGCC  
CGAGAAGGAGAGCTGGACCGTGAACGACATCCAGAAGCTGGTGGCAAGCTGCTGCC  
GGGCCAGCCAGATCTACCCGGCATCAAGGTGCCAGCTGTGCAAGCTGCTGCC  
GCGCCAAGGCCCTGACCGACATCGTGCCTGACCGAGGCCAGCTGGAGCTG  
GCCGAGAACCGCGAGATCCTGCGCGAGCCGTGACGGCGTGTACTACGACCCAG  
CAAGGACCTGGTGGCCAGATCCAGAACGAGGGCCACGACCAAGTGGACCTACCAGA  
TCTACCAGGAGGCCCTCAAGAACCTGAAGACCGCAAGTACGCCAAGATGCGCACC  
GCCCACACCAACGACGTGAAGCAGCTGACCGAGGCCGTGCAAGAACGATGCCATGGA  
GAGCATCGTGTCTGGGCAAGACCCCCAACGATCCGCTGCCATCCAGAACGGAGAC  
CTGGGAGACCTGGTGGACCGACTACTGGCAGGCCACCTGGATCCCCGAGTGGAGTT  
CGTGAACACCCCCCCCCCTGGTGAAGCTGTGGTACCAAGCTGGAGAACGGAGCC  
CGGCCGAGACCTCTACGTGGACGGGCCAACCGCGAGACCAAGATCGGCA  
AGGCCGGTACGTGACCGACCGGGCCGGCAGAACGATCGTGAACGCC  
ACCAACCAGAACGACCGAGCTGCAGGCCATCCAGCTGGCCCTGCAGGACAGCGGCAG  
CGAGGTGAACATCGTACCGACAGCCAGTACGCCCTGGGATCATCCAGGCCAG  
CGACAAGAGCGAGAGCGAGCTGGTAACCAAGATCATCGAGCAGCTGATCAAGAACGG  
AGAAGGTGTACCTGAGCTGGGTGCCGCCACAAGGGCATGGCGCAACGAGCAG  
ATCGACAAGCTGGTGAAGCAAGGGCATCCGCAAGGTGCTGTTCCGGACGGCATCGAT  
GGCGCATCGTGTACCAAGTACATGGACGACCTGTACGTGGCAGCGCCGG  
AGGATCGATTAAAAGCTTCCGGGGCTAGCACCGGTGAATT

FIGURE 8

**PR975YM (SEQ ID NO:31)**

GTCGACGCCACCATGGCGAGGCCATGAGCCAGGCCACCAGCGCCAACATCCTGAT  
GCAGCGCAGCAACTCAAGGGCCCAAGCGCATCATCAAGTGCTCAACTGCGGCAA  
GGAGGGCCACATGCCGCAACTGCCGCCCGCAAGAAGGGCTGCTGGAAGT  
GCGCAAGGAGGGCCACCGAGATGAAGGACTGCACCGAGCGCCAGGCCAACTTCTC  
CGCAGGGACCTGGCCTCCCCCAGGGCAAGGCCCGAGTTCCCCAGCGAGCAGAA  
CCGCGCCAACAGCCCCACCAGCCGAGCTGCAGGTGCGCGGCGACAACCCCCGCA  
GCGAGGCCGGCGCCAGGCCAGGGCACCTGAACCTCCCCAGATCACCCGTGGC  
AGC GCCCCTGGT GAGCATCAAGGTGGCGGCCAGATCAAGGAGGCCCTGCTGGAC  
ACCGGCCGACGACACCGTGTGGAGGAGATGAGCCTGCCGCCAAGTGGAAAGCC  
CAAGATGATCGGCGGCATCGGCCGCTTCATCAAGGTGCGCCAGTACGACCAAGATCCT  
GATCGAGATCTGCGGCAAGAAGGCCATCGCACCGTGTGATCGGCCCAACCCCCGT  
GAACATCATCGGCCGCAACATGCTGACCCAGCTGGCTGCACCCCTGAACCTCCCCAT  
CAGCCCCATCGAGACCGTGCCGTGAAGCTGAAGGCCGATGGACGGCCCCAAGG  
TGAAGCAGTGGCCCTGACCGAGGAGAAGATCAAGGCCCTGACCGCCATCTGCGAG  
GAGATGGAGAAGGAGGGCAAGATACCAAGATCGGCCCGAGAACCCCTACAACAC  
CCCCGTGTTGCCATCAAGAAGAAGGACAGCACCAAGTGGCGCAAGCTGGACT  
TCCCGAGCTGAACAAGCGACCCAGGACTTCTGGAGGTGCAAGCTGGCATCCCCC  
ACCCCGCCGGCTGAAGAAGAAGAGCGTGACCGTGTGGACGTGGCGACGCC  
TACTTCAGCGTGCCCCCTGGACGAGGACTTCCGCAAGTACACCGCCTTCACCATCCCC  
AGCATCAACAACGAGACCCCCGGCATCCGCTACCAAGTACAACGTGCTGCCCAAGGGC  
TGGAAAGGGCAGCCCCAGCATCTCCAGAGCAGCATGACCAAGATCCTGGAGGCCCTC  
CGCGCCCGCAACCCCGAGATCGTGTACCTACAGGCCCTGTACGTGGCAGCGAC  
CTGGAGATCGGCCAGCACCGGCCAAGATCGAGGAGCTGCGCAAGCACCTGCTGCG  
CTGGGGCTTCACCACCCCCGACAAGAACGACCAAGAGGCCCTTCTGTGGAT  
GGGCTACGAGCTGCACCCCGACAAGTGGACCGTGCAGCCATCGAGCTGCCGAGA  
AGGAGAGCTGGACCGTGAACGACATCCAGAAGCTGGTGGCAAGCTGAACCTGGGCC  
AGCCAGATCTACCCGGCATCAAGGTGCGCCAGCTGTGCAAGCTGCTGCGCCGCC  
AAGGCCCTGACCGACATCGTCCCCCTGACCGAGGAGGCCAGCTGGAGCTGGCGA  
GAACCGCGAGATCCTGCGCAGGCCGTGCAGGGCTGTACTACGACCCAGCAAGG  
ACCTGGTGGCCGAGATCCAGAACGACGGCCACGACAGTGGACCTACAGATCTAC  
CAGGAGCCCTCAAGAACCTGAAGACCGCAAGTACGCCAAGATGCGCACCGCCA  
CACCAACGACGTGAAGCAGCTGACCGAGGCCGTGCAGAACAGATGCCATGGAGAGCA  
TCGTGATCTGGGGCAAGACCCCCAAGTCCGCCCTGCCATCCAGAACGGAGACCTGG  
AGACCTGGTGGACCGACTACTGGCAGGCCACCTGGATCCCCGAGTGGAGTTCGTGA  
ACACCCCCCCCCCTGGTGAAGCTGTGGTACCAAGCTGGAGAACGGAGCCATCATGGCG  
CCGAGACCTTCTACGTGGACGGCGCCGCCAACCGCGAGACCAAGATGGCAAGGCC  
GGCTACGTGACCGACCGGGGCCAGAACAGATCGTGAACGCTGACCGAGACCAAA  
CCAGAACGGAGCTGCAGGCCATCCAGCTGGCCCTGCAGGACAGCGGCCAGCGAGG  
TGAACATCGTGAACGACGCCAGTACGCCCTGGCATCATCCAGGCCAGCCGACA  
AGAGCGAGAGCGAGCTGGTGAACCAAGATCATCGAGCAGCTGATCAAGAACGGAGAAG  
GTGTACCTGAGCTGGGTGCCGCCACAAGGGCATGGCGCAACGAGCAGATCGA  
CAAGCTGGTGAAGCAAGGGCATCCGCAAGGTGCTGTTCCCTGGACGGCATCGATGGCG  
GCATCGTGAATCCTACAGTACATGGACGACCTGTACGTGGCAGCGCGGCCCTAGGA  
TCGATTAAGCTCCGGGCTAGCACCGGTGAATTG

**FIGURE 9**

PR975YMWM (SEQ ID NO:32)

GTCGACGCCACCATGGCCAGGCCATGAGCCAGGCCACCAGGCCAACATCCTGAT  
GCAGCGCAGCAACTCAAGGGCCCCAAGCGCATCATCAAGTGTCAACTGCGGCAA  
GGAGGGCCACATGCCCGCAACTGCCGCCCGCAAGAAGGGCTGCTGGAAGT  
GCGCAAGGAGGGCCACCAGATGAAGGACTGCACCGAGCGCCAGGCCAACTTCTC  
CGCGAGGACCTGGCTTCCCCCAGGGCAAGGCCCGAGTTCCCCAGCGAGCAGAA  
CCGCGCCAACAGCCCCACCAGCCCGAGCTGCAGGTGCGCGACAACCCCCGCA  
GCGAGGCCGGCGCCAGGCCAGGGCACCTGAACCTCCCCAGATCACCCGTGGC  
AGCGCCCCCTGGTGAGCATCAAGGTGGCGGCCAGATCAAGGAGGCCCTGCTGGAC  
ACCGGCGCCGACGACACCGTGTGGAGGAGATGAGCCTGCCGCAAGTGGAAAGCC  
CAAGATGATCGCGGCATCGCGGCTTCATCAAGGTGCCAGTACGACCAAGATCCT  
GATCGAGATCTCGCGCAAGAAGGCCATCGGCACCGTGTGATCGGCCAACCCCCGT  
GAACATCATCGGCCGAAACATGCTGACCCAGCTGGCTGCACCCCTGAACCTCCCCAT  
CAGCCCCATCGAGACCGTGTGGACAGGAGATCAAGGCCCTGACCGCCACTGCGAG  
TGAAGCAGTGGCCCCCTGACCGAGGAGAAGATCAAGGCCCTGACCGCCACTGCGAG  
GAGATGGAGAAGGAGGGCAAGATACCAAGATCGGCCCGAGAACCCCTACAACAC  
CCCCGTGTTGCCATCAAGAAGAAGGACAGCACCAAGTGGCGCAAGCTGGTGGACT  
TCCCGCAGCTGAACAAAGCGCACCCAGGACTCTGGGAGGGTGCAGCTGGGATCCCCC  
ACCCCGCCGGCTGAAGAAGAAGAGCGTGACCGTGTGGACGTGGCGACGCC  
TACTTCAGCGTGTCCCCCTGGACGAGGACTTCCGCAAGTACACCGCCTTACCATCCCC  
AGCATCAACAACGAGACCCCCGGCATCCGCTACCAAGTACAACGTGCTGCCAGGGC  
TGGAAAGGGCAGCCCCAGCATCTTCAGAGCAGCATGACCAAGATCCTGGAGGCCCTTC  
CGCGCCCGCAACCCCGAGATCGTGATCTACCGAGCCCCCTGTACGTGGGAGCGAC  
CTGGAGATCGGCCAGCACCGGCCAAGATCGAGGAGCTGCGCAAGCACCTGCTGCG  
CTGGGGCTTACCAACCCCCGACAAGAACGACCAAGGAGGCCCTTCCCTGCCCAT  
CGAGCTGCACCCGACAAGTGGACCGTGCAGCCATCGAGCTGCCGAGAACGGAGA  
GCTGGACCGTGAACGACATCCAGAAGCTGGTGGCAAGCTGAACCTGGGCAAGGCCAG  
ATCTACCCGGCATCAAGGTGCGCCAGCTGTGCAAGCTGCTGCGCGGCCAAGGCC  
CTGACCGACATCGTGTCCCCCTGACCGAGGAGGCCAGCTGGAGCTGGCGAGAACCG  
CGAGATCCTGCGCGAGCCGTGCACGGCGTGTACTACGACCCAGCAAGGACCTGGT  
GGCCGAGATCCAGAACGAGGCCAGCACCAAGTGGACCTACCAAGATCTACCAAGGAGC  
CCTTCAGAACCTGAAGACCGGCAAGTACGCCAACGATGCGCACCGCCCACACCAAC  
GACGTGAAGCAGCTGACCGAGGCCGTGCAGAACGATGCCATGGAGAGCATCGTGAT  
CTGGGGCAAGACCCCCAAGTCCGCTGCCATCCAGAACGGAGACCTGGGAGACCT  
GGTGGACCGACTACTGGCAGGCCACCTGGATCCCCGAGTGGGAGTCGTGAACACCC  
CCCCCCTGGTGAAGCTGTGGTACCAAGCTGGAGAACGGAGGCCATCATCGCGCCGAG  
ACCTTCTACGTGGACGGCGCCCAACCGCGAGACCAAGATCGCAAGGCCGGCTA  
CGTGACCGACCGGGGGCGAGAACGATCGTGAGCCTGACCGAGACCGAGCGAGGTGAAC  
ATCGTGACCGACAGCCAGTACGCCCTGGCATCATCCAGGCCAGGCCACAAGAG  
CGAGAGCGAGCTGGTGAACCAGATCATCGAGCAGCTGATCAAGAACGGAGAACGGTGT  
ACCTGAGCTGGGTGCCGCCACAAGGGCATCGCGGCCAAGCAGCAGATCGACAAAG  
CTGGTGAGCAAGGGCATCCGCAAGGTGCTGTTCCCTGGACGGCATCGATGGCGGCATC  
GTGATCTACCAAGTACATGGACGACCTGTACGTGGCAGCGGCCCTAGGATCGAT  
TAAAAGCTCCGGGGTAGCACCGGTGAATT

FIGURE 10

1 TGGAAGGGTT AATTTACTCC AAGAAAAGGC AAGAAATCCT TGATTTGTGG GTCTATCACA  
 61 CACAAGGCTT CTTCCCTGAT TGGCAAAACT ACACACCGGG GCCAGGGTC AGATATCCAC  
 121 TGACCTTGAG ATGGTGTAC AAGCTAGTGC CAGTGACCC AGGGGAGGTG GAAGAGGCCA  
 181 ACGGAGGAGA AGACAACGTG TTGCTACACC CTATGAGCCA ACATGGAGCA GAGGATGAAG  
 241 ATAGAGAAGT ATTAAGTGG AAGTTTGACA GCCTCTAGC ACGCAGACAC ATGGCCCGCG  
 301 AGCTACATCC GGAGTATTAC AAAGACTGCT GACACAGAAG GGACTTCCG CCTGGGACTT  
 361 TCCACTGGGG CGTTCCGGGA GGTGTGGTCT GGGCGGACT TGGGAGTGGT CAACCCCTCAG  
 421 ATGCTGCATA TAAGCAGCTG CTTTCGCT GTACTGGTC TCTCTCGTA GACCAGATCT  
 481 GAGCCTGGGA GCCCTCTGGC TATCTAGGGA ACCCACTGCT TAAGCCTCAA TAAAGCTTGC  
 541 CTTGAGTGTCT TTAAGTAGTG TGTGCCATC TGTTGTGTGA CTCTGGTAAC TAGAGATCCC  
 601 TCAGACCCTT TGTGGTAGTG TGGAAAATCT CTAGCAGTGG CGCCCGAACAA GGGACCAGAA  
 661 AGTGAAGATG AGACCAGAGG AGATCTCTCG ACGCAGGACT CGGCTTGCTG AAGTGCACAC  
 721 GGCAAGAGGGC GAGAGGGGCG GCTGGTAGT ACGCCAATTT TACTTGACTA GCGGAGGCTA  
 781 GAAGGAGAGA GATGGGTGCG AGAGCGTCAA TATTAAGCGG CGGAAAATTA GATAAAATGGG  
 841 AAAGAATTAG GTTAAGGCCA GGGGGAAAGA AACATTATAT GTTAAAACAT CTAGTATGGG  
 901 CAAGCAGGGA GCTGGAAAGA TTTGCACTTA ACCCTGGCCT GTTAGAAACA TCAGAAGGCT  
 961 GTAAACAAAT AATAAAACAG CTACAACCAG CTCTTCAGAC AGGAACAGAG GAACTTAGAT  
 1021 CATTATTCAA CACAGTAGCA ACTCTCTATT GTGTACATAA AGGGATAGAG GTACGAGACA  
 1081 CCAAGGAAGC CTTAGACAAG ATAGAGGAAG AACAAAACAA ATGTCAGCAA AAAGCACAAC  
 1141 AGGCAAAAGC AGCTGACGAA AAGGTCAGTC AAAATTATCC TATAGTACAG AATGCCAAG  
 1201 GGCAAATGGT ACACCAAGCT ATATCACCTA GAACATTGAA TGCATGGATA AAAGTAATAG  
 1261 AGGAAAAGGC TTTCAATCCA GAGGAAATAC CCATGTTAC AGCATTATCA GAAGGAGCCA  
 1321 CCCCACAAGA TTTAAACACA ATGTTAAATA CAGTGGGGGG ACATCAAGCA GCCATGCAA  
 1381 TGTTAAAAGA TACCATCAAT GAGGAGGCTG CAGAATGGGA TAGGACACAT CCAGTACATG  
 1441 CAGGGCCTGT TGCACCAGGC CAGATGAGAG AACCAAGGGG AAGTGCACATA GCAGGAAC  
 1501 CTAGTACCCCT TCAGGAACAA ATAGCATGGA TGACAAGTAA TCCACCTATT CCAGTAGAAG  
 1561 ACATCTATAA AAGATGGATA ATTCTGGGT TAAATAAAAT AGTAAGAATG TATAGCCCTG  
 1621 TTAGCATTGGACATAA CAAGGGCCAA AAGAACCTT TAGAGACTAT GTAGACCGGT  
 1681 TCTTTAAAC CTTAAGAGCT GAACAAGCTA CACAAGATGT AAAGAATTGG ATGACAGACA  
 1741 CCTTGTTGGT CCAAAATGCG AACCCAGATT GTAAGACCAT TTTAAGAGCA TTAGGACAG  
 1801 GGGCCTCATT AGAAGAAATG ATGACAGCAT GTCAGGGAGT GGGAGGACCT AGCCATAAAG  
 1861 CAAGAGTGTG GGCTGAGGC ATGAGCCAA CAAACAGTAA CATACTAGTG CAGAGAAGCA  
 1921 ATTTTAAAGG CTCTAACAGA ATTATTAAAT GTTCAACTG TGGCAAAGTA GGGCACATAG  
 1981 CCAGAAATTG CAGGGCCCT AGGAAAAGG GCTGTTGGAA ATGTGGACAG GAAGGACACC  
 2041 AAATGAAAGA CTGTACTGAG AGGCAGGCTA ATTGTTTAGG GAAAATTGG CCTTCCCACA  
 2101 AGGGGAGGCC AGGGAATTTC CTCCAGAAC GACCAGAGCC AACAGCCCCA CCAGCAGAAC  
 2161 CAACAGCCCC ACCAGCAGAG AGCTTCAGGT TCGAGGAGAC AACCCCCGTG CCGAGGAAGG  
 2221 AGAAAGAGAG GGAACCTTTA ACTTCCCTCA AATCACTCTT TGGCAGCGAC CCCTTGTCTC  
 2281 AATAAAAGTA GAGGGCCAGA TAAAGGAGGC TCTCTTAGAC ACAGGAGCAG ATGATACAGT  
 2341 ATTAGAAGAA ATAGATTGC CAGGGAAATG GAAACCAAAA ATGATAGGGG GAATTGGAGG  
 2401 TTTTATCAA GTAAAGACAGT ATGATCAAAT ACTTATAGAA ATTGTGGAA AAAAGGCTAT  
 2461 AGGTACAGTA TTAGTAGGGC CTACACCAGT CAACATAATT GGAAGAAATC TGTAACTCA  
 2521 GCTTGGATGC ACACAAATT TTCCAATTAG TCCTATTGAA ACTGTACCAAG TAAAATTAAA  
 2581 ACCAGGAATG GATGGCCCAA AGGTCAAACA ATGCCATTG ACAGAAGAAA AAATAAAAGC  
 2641 ATTAACAGCA ATTTGTGAGG AAATGGAGAA GGAAGGAAA ATTACAAAAA TTGGGCTGA  
 2701 TAATCCATAT AACACTCCAG TATTGCCAT AAAAAAGAAG GACAGTACTA AGTGGAGAAA  
 2761 ATTAGTAGAT TTCAGGGAAC TCAATAAAAG AACTCAAGAC TTTTGGGAAG TTCAATTAGG  
 2821 AATACCACAC CCAGCAGGAT TAAAAAAGAA AAAATCAGTG ACAGTGCCTAG ATGTGGGGGA  
 2881 TGCATATTTC TCAGTTCCCT TAGATGAAAG CTTCAAGGAAA TATACTGCAT TCACCATACC

FIGURE 11

2941 TAGTATAAAC AATGAAACAC CAGGGATTAG ATATCAATAT AATGTGCTGC CACAGGGATG  
3001 GAAAGGATCA CCAGCAATAT TCCAGAGTAG CATGACAAAAA ATCTTAGAGC CCTTCAGAGC  
3061 AAAAAATCCA GACATAGTTA TCTATCAATA TATGGATGAC TTGTATGTAG GATCTGACTT  
3121 AGAAAATAGGG CAACATAGAG CAAAAATAGA AGAGTTAAGG GAACATTAT TGAAATGGGG  
3181 ATTTACAACA CCAGACAAGA AACATCAAAA AGAACCCCCA TTTCTTGGA TGGGGTATGA  
3241 ACTCCATCCT GACAATGGA CAGTACAACC TATACTGCTG CCAGAAAAGG ATAGTTGGAC  
3301 TGTCAATGAT ATACAGAAGT TAGTGGAAA ATTAAACTGG GCAAGTCAGA TTTACCCAGG  
3361 GATTAAAGTA AGGCAACTCT GTAAACTCCT CAGGGGGGCC AAAGCACTAA CAGACATAGT  
3421 ACCACTAACT GAAGAAGCAG AATTAGAATT GGCAGAGAAC AGGGAAATT TAAGAGAAC  
3481 AGTACATGGA GTATATTATG ATCCATCAAA AGACTTGATA GCTGAAATAC AGAAACAGGG  
3541 GCATGAACAA TGGACATATC AAATTTATCA AGAACCATTT AAAAATCTGA AACACAGGGAA  
3601 GTATGCAAA ATGAGGACTA CCCACACTAA TGATGTAAA CAGTTAACAG AGGCAGTGCA  
3661 AAAAATAGCC ATGGAAAGCA TAGTAATATG GGGAAAGACT CCTAAATT TA GACTACCCAT  
3721 CCAAAAAGAA ACATGGGAGA CATGGTGGAC AGACTATTGG CAAGCCACCT GGATCCCTGA  
3781 GTGGGAGTTT GTTAATACCC CTCCCCTAGT AAAATTATGG TACCAACTAG AAAAAGATCC  
3841 CATAGCAGGA GTAGAAACTT TCTATGTAGA TGGAGCAACT AATAGGAAAG CTAAAATAGG  
3901 AAAAGCAGGG TATGTTACTG ACAGAGGAAG GCAGAAAATT GTTACTCTAA CTAACACAAAC  
3961 AAATCAGAAG ACTGAGTTAC AAGCAATTCA GCTAGCTCTG CAGGATTCA GATCAGAAAGT  
4021 AAACATAGTA ACAGACTCAC AGTATGCATT AGGAATCATT CAAGCACAAC CAGATAAGAG  
4081 TGACTCAGAG ATATTTAACC AAATAATAGA ACAGTTAATA AACAAAGGAAA GAATCTACCT  
4141 GTCATGGGT A CCAGCACATA AAGGAATTGG GGGAAATGAA CAAGTAGATA AATTAGTAAG  
4201 TAAGGAAATT AGGAAAGTGT TGTTTCTAGA TGGAAATAGAT AAAGCTCAAG AAGAGCATGA  
4261 AAGGTACCCAC AGCAATTGGG GAGCAATGGC TAATGAGTTT AATCTGCCAC CCATAGTAGC  
4321 AAAAGAAATA GTAGCTAGCT GTGATAAATG TCAGCTAAA GGGGAAGCCA TACATGGACA  
4381 AGTCGACTGT AGTCCAGGG A TATGGCAATT AGATTGTACC CATTAGAGG GAAAATCAT  
4441 CCTGGTAGCA GTCCATGTAG CTAGTGGCTA CATGGAAGCA GAGGTTATCC CAGCAGAAAC  
4501 AGGACAAGAA ACAGCATATT TTATATTAAA ATTAGCAGGA AGATGGCCAG TCAAAGTAAT  
4561 ACATACAGAC AATGGCAGTA ATTTTACCA G TACTGCAGTT AAGGCAGCCT GTTGGTGGGC  
4621 AGGTATCCAA CAGGAATTG GAATTCCCTA CAATCCCCAA AGTCAGGGAG TGGTAGAATC  
4681 CATGAATAAA GAATTAAAGA AAATAATAGG ACAAGTAAGA GATCAAGCTG AGCACCTTAA  
4741 GACAGCAGTA CAAATGGCAG TATTCAATTCA CAATTTAAA AGAAAAGGGG GAATTGGGGG  
4801 GTACAGTGCA GGGGAAAGAA TAATAGACAT AATAGCAACA GACATACAAA CTAAAGAATT  
4861 ACAAAAACAA ATTATAAGAA TTCAAAATT TCAGGTTTAT TACAGAGACA GCAGAGACCC  
4921 TATTTGGAAA GGACCAGCCG AACTACTCTG GAAAGGTGAA GGGTAGTAG TAATAGAAGA  
4981 TAAAGGTGAC ATAAAGGTAG TACCAAGGAG GAAAGCAAAA ATCATTAGAG ATTATGGAAA  
5041 ACAGATGGCA GGTGCTGATT GTGTGGCAGG TGGACAGGAT GAAGATTAGA GCATGGAATA  
5101 GTTTAGTAA GCACCATATG TATATATCAA GGAGAGCTAG TGGATGGTC TACAGACATC  
5161 ATTTTGAAAG CAGACATCCA AAAGTAAGTT CAGAAGTACA TATCCCATTAA GGGGATGCTA  
5221 GATTAGTAAT AAAAACATAT TGGGGTTTGC AGACAGGAGA AAGAGATTGG CATTGGGTC  
5281 ATGGAGTCTC CATAGAATGG AGACTGAGAG AATACAGCAC ACAAGTAGAC CCTGACCTGG  
5341 CAGACCAGCT AATTCAATG CATTATTTG ATTGTTTAC AGAATCTGCC ATAAGACAAG  
5401 CCATATTAGG ACACATAGTT TTTCTCTAGGT GTGACTATCA AGCAGGACAT AAGAAGGTAG  
5461 GATCTCTGCA ATACTTGGCA CTGACAGCAT TGATAAAACC AAAAAGAGA AAGCCACCTC  
5521 TGCCTAGTGT TAGAAAATTA GTAGAGGATA GATGGAACGA CCCCCAGAAC ACCAGGGGCC  
5581 GCAGAGGGAA CCATACAATG AATGGACACT AGAGATTCTA GAAGAACTCA AGCAGGAAGC  
5641 TGTCAAGACAC TTTCTCTAGAC CATGGCTCCA TAGCTTAGGA CAATATATCT ATGAAACCTA  
5701 TGGGGATACT TGGACGGGAG TTGAAGCTAT AATAAGAGTA CTGCAACAAAC TACTGTTCAT  
5761 TCATTTCAAGA ATTGGATGCC AACATAGCAG AATAGGCATC TTGCGACAGA GAAGAGCAAG  
5821 AAATGGAGCC AGTAGATCCT AAAC TAAAGC CCTGGAACCA TCCAGGAAGC CAACCTAAAA  
5881 CAGCTTGAA TAATTGCTTT TGCAAAACT GTAGCTATCA TTGCTCTAGTT TGCTTTAGA

FIGURE 11

5941 CAAAAGGTTT AGGCATTTCC TATGGCAGGA AGAAGCGGAG ACAGCGACGA AGCGCTCCTC  
6001 CAAGTGGTGA AGATCATCAA AATCCTCTAT CAAAGCAGTA AGTACACATA GTAGATGTAA  
6061 TGGTAAGTTT AAGTTTATTT AAAGGAGTAG ATTATAGATT AGGAGTAGGA GCATTGATAG  
6121 TAGCACTAAT CATAGCAATA ATAGTGTGGA CCATAGCATA TATAGAATAT AGGAAATTGG  
6181 TAAGACAAAA GAAAATAGAC TGGTTAATTA AAAGAATTAG GGAAAGAGCA GAAGACAGTG  
6241 GCAATGAGAG TGATGGGAC ACAGAAGAAT TGTCAACAAT GGTGGATATG GGGCATCTTA  
6301 GGCTTCTGGA TGCTAATGAT TTGTAACACG GAGGACTTGT GGGTCACAGT CTACTATGGG  
6361 GTACCTGTGT GGAGAGAAGC AAAAACTACT CTATTCTGTG CATCAGATGC TAAAGCATAT  
6421 GAGACAGAAG TGCAATAATGT CTGGGCTACA CATGCTTGTG TACCCACAGA CCCCAACCCA  
6481 CAAGAAATAG TTTTGGAAA TGTAACAGAA AATTAAATA TGTGGAAAAA TAACATGGCA  
6541 GATCAGATGC ATGAGGATAT AATCAGTTA TGGGATCAAA GCCTAAAGCC ATGTGTAAAG  
6601 TTGACCCAC TCTGTGTAC TTTAAACTGT ACAGATACAA ATGTTACAGG TAATAGAACT  
6661 GTTACAGGTA ATACAAATGA TACCAATATT GCAAATGCTA CATATAAGTA TGAAGAAATG  
6721 AAAAATTGCT CTTTCAATGC AACCACAGAA TTAAGAGATA AGAAAACATAA AGAGTATGCA  
6781 CTCTTTATA AACTTGATAT AGTACCACTT AATGAAAATA GTAACAACCTT TACATATAGA  
6841 TTAATAAATT GCAATACCTC AACCATAACA CAAGCCTGTC CAAAGGTCTC TTTTGACCCG  
6901 ATTCCCTATAC ATTACTGTGC TCCAGCTGAT TATGCGATT TAAAGTGTAA TAATAAGACA  
6961 TTCAATGGGA CAGGACCATG TTATAATGTC AGCACAGTAC AATGTACACA TGAATTTAAG  
7021 CCAGTGGTAT CAACTCAACT ACTGTTAAAT GGTAGTCTAG CAGAAGAAGG GATAATAATT  
7081 AGATCTGAAA ATTTGACAGA GAATACCAAA ACAATAATAG TACATCTTAA TGAATCTGTA  
7141 GAGATTAATT GTACAAGGCC CAACAATAAT ACAAGGAAAA GTGTAAGGAT AGGACCAGGA  
7201 CAAGCATTCT ATGCAACAAA TGACGTAATA GGAAACATAA GACAAGCACA TTGTAACATT  
7261 AGTACAGATA GATGGAATAA AACCTTACAA CAGGTAATGA AAAAATTAGG AGAGCATTTC  
7321 CCTAATAAAA CAATAAAATT TGAACCACAT GCAGGAGGGG ATCTAGAAAT TACAATGCAT  
7381 AGCTTTAATT GTAGAGGAGA ATTTTCTAT TGCAATACAT CAAACCTGTT TAATAGTACA  
7441 TACTACCTA AGAATGGTAC ATACAAATAC AATGGTAATT CAAGCTTACC CATCACACTC  
7501 CAATGCAAAA TAAAACAAAT TGTACGCATG TGGCAAGGGG TAGGACAAGC AATGTATGCC  
7561 CCTCCCATTG CAGGAAACAT AACATGTAGA TCAAACATCA CAGGAATACT ATTGACACGT  
7621 GATGGGGGAT TTAACAACAC AAACAACGAC ACAGAGGAGA CATTCAAGACC TGGAGGAGGA  
7681 GATATGAGGG ATAACCTGGAG AAGTGAATTA TATAAATATA AAGTGGTAGA AATTAAGCCA  
7741 TTGGGAATAG CACCCACTAA GGCAAAAGA AGAGTGGTGC AGAGAAAAA AAGAGCAGTG  
7801 GGAATAGGAG CTGTGTTCTT TGGGTTCTTG GGAGCAGCAG GAAGCACTAT GGGCGCAGCG  
7861 TCAATAACGC TGACGGTACA GGCCAGACAA CTGTTGTCTG GTATAGTGCA ACAGCAAAGC  
7921 AATTGCTGA AGGCTATAGA GGCACACAG CATATGTTGC AACTCACAGT CTGGGGCATT  
7981 AAGCAGCTCC AGGGAGAGT CCTGGCTATA GAAAGATACC TAAAGGATCA ACAGCTCCTA  
8041 GGGATTTGGG GCTGCTCTGG AAGACTCATC TGCACCACTG CTGTGCCCTG GAACTCCAGT  
8101 TGGAGTAATA AATCTGAAGC AGATATTGG GATAACATGA CTTGGATGCA GTGGGATAGA  
8161 GAAATTAATA ATTACACAGA ACAATATTC AGGGTCTTG AAGACTCGCA AAACCAGCAG  
8221 GAAAAGAATG AAAAAGATT ATTAGAATTG GACAAGTGGG ATAATCTGTG GAATTGGTTT  
8281 GACATATCAA ACTGGCTGTG GTATATAAA ATATTCAAA TGATAGTAGG AGGCTTGATA  
8341 GGTAAAGAA TAATTTTGC TGTGCTCTCT ATAGTGAATA GAGTTAGGCA GGGATACTCA  
8401 CCTTTGTCAT TTCAGACCC TACCCCAAGC CCGAGGGGAC TCGACAGGCT CGGAGGAATC  
8461 GAAGAAGAAG GTGGAGAGCA AGACAGAGAC AGATCCATAC GATTGGTGAG CGGATTCTTG  
8521 TCGCTTGCCCT GGGACGATCT GCGGAGCCTG TGCCTCTTCA GCTACCACCG CTTGAGAGAC  
8581 TTCATATTAA TTGCACTGAG GGCAGTGGAA CTTCTGGGAC ACAGCAGTCT CAGGGACTA  
8641 CAGAGGGGGT GGGAGATCCT TAAGTATCTG GGAAGTCTTG TGCAGTATTG GGGTCTAGAG  
8701 CTAAAAAAAGA GTGCTATTAG TCCGCTGTGAT ACCATAGCAA TAGCAGTAGC TGAAGGAAACA  
8761 GATAGGATTA TAGAATTGGT ACAAAAGAATT TGAGAGCTA TCCTCAACAT ACCTAGGAGA  
8821 ATAAGACAGG GCTTTGAAGC AGCTTTGCTA TAAAATGGGA GGCAAGTGGT CAAAACGCAG  
8881 CATAGTTGGA TGGCCTGCAG TAAGAGAAAG AATGAGAAGA ACTGAGCCAG CAGCAGAGGG  
8941 AGTAGGAGCA GCGTCTCAAG ACTTAGATAG ACATGGGGCA CTTACAAGCA GCAACACACCC

FIGURE 11

9001 TGCTACTAAT GAAGCTTGTG CCTGGCTGCA AGCACAAGAG GAGGACGGAG ATGTAGGCTT  
9061 TCCAGTCAGA CCTCAGGTAC CTTTAAGACC AATGACTTAT AAGAGTGCAG TAGATCTCAG  
9121 CTTCTTTTA AAAGAAAAGG GGGGACTGGA AGGGTTAATT TACTCTAGGA AAAGGCAAGA  
9181 AATCCTTGAT TTGTGGGTCT ATAACACACA AGGCTTCTTC CCTGATTGGC AAAACTACAC  
9241 ATCGGGGCCA GGGGTCCGAT TCCCAGTGC CTTTGGATGG TGCTTCAGC TAGTACCAAGT  
9301 TGACCCAAGG GAGGTGAAAG AGGCCAATGA AGGAGAAGAC AACTGTTGC TACACCCAT  
9361 GAGCCAACAT GGAGCAGAGG ATGAAGATAG AGAAGTATTA AAGTGGAAAGT TTGACAGCCT  
9421 TCTAGCACAC AGACACATGG CCCCGAGCT ACATCCGGAG TATTACAAAG ACTGCTGACA  
9481 CAGAAGGGAC TTTCCGCCTG GGACTTTCCA CTGGGGCGTT CGGGGAGGTG TGGTCTGGC  
9541 GGGACTTGGG AGTGGTCACC CTCAGATGCT GCATATAAGC AGCTGCTTT CGCTGTACT  
9601 GGGTCTCTCT CGGTAGACCA GATCTGAGCC TGGGAGCTCT CTGGCTATCT AGGAAACCCA  
9661 CTGCTTAGGC CTCATAAAAG CTTGCCTTGA GTGCTCTAAG TAGTGTGTGC CCATCTGTTG  
9721 TGTGACTCTG GTAACTAGAG ATCCCTCAGA CCCTTGTGG TAGTGTGGAA AATCTCTAGC  
9781 A

FIGURE 11

**SEQ ID NO:34**

GCTGAGGCAATGAGCCAAGCAACCAGCGCAAACATACTGATGCAGAGAAGCAATT  
CAAAGGCCCTAAAAGAATTATTAATGTTCAACTGTGGCAAGGAAGGGCACATAG  
CTAGAAATTGTAGGGCCCCTAGGAAAAAAGGCTGTTGAAATGTGGAAAGGAAGGA  
CACCAAATGAAAGACTGTACTGAGAGGCAGGCTAA

**FIGURE 12**

975Pol wt until 6aa Int: (SEQ ID NO:35)

TTTTTAGGGAAGATTGGCCTCCCACAAGGGAAAGGCCAGGGAAATTCCCTCAGAA  
CAGAACAGAGCCAACAGCCCCACCAGCAGAGAGCTCAAGTCGAGGAGACAACCC  
CCGCTCCGAAGCAGGAGCGAAAGACAGGGAAACCCTAATTCCCTCAAATCACTCT  
TTGGCAGCGACCCCTGTCTCAATAAAAGTAGGGGTCAAATAAGGAGGCTCTT  
AGACACAGGAGCTGATGATACAGTATTAGAAGAAATGAGTTGCCAGGAAAATGGA  
AACCAAAAATGATAGGAGGAATTGGAGGTTTATCAAAGTAAGACAGTATGATCAA  
ATACTTATAGAAATTGTGGAAAAAAGGCTATAGGTACAGTATTAATAGGACCTACA  
CCTGTCAACATAATTGGAAGGAATATGTTGACTCAGCTGGATGCACACTAAATT  
CCAATTAGTCCCATTGAAACTGTGCCAGTAAAATTAAAGCCAGGAATGGATGCCCA  
AAGGTTAAACAATGCCATTGACAGAAGAGAAAATAAGCATTACAGCAATT  
TGAAGAAATGGAGAAAGAAGGAAAATTACAAAAATTGGGCTGAAAATCCATATA  
ACACTCCAGTATTGCCATAAAAAGAAGGACAGTACTAAGTGGAGAAAGTTAGTA  
GATTCAGGGAACTTAATAAAAGAACTCAAGACTTTGGGAAGTCAATTAGGAATA  
CCACACCCAGCAGGGTTAAAAAGAAAAATCAGTACAGTACTGGATGTGGGGA  
TGCATATTTCAGTCCATTAGATGAGGACTTCAGGAAATATACTGCATTACCCATA  
CCTAGTATAAACATGAAACACCAGGGATTAGATATCAATATAATGTGCTTCACAG  
GGATGGAAAGGATCACCATCAATATTCCAGAGTAGCATGACAAAAATCTTAGAGCC  
CTTAGAGCAAGAAATCCAGAAATAGTCATCTATCAATATATGGATGACTGTATGT  
AGGATCTGACTTAGAAATAGGGCAACATAGAGCAAAAATAGAGGAGTTAAGAAAAC  
ATCTGTTAAGGTGGGATTACACACCAGGACAAGAAACATCAGAAAGAACCCCCA  
TTCTTGGATGGGTATGAACCTCCATCCTGACAAATGGACAGTACAGCCTATAGAG  
TTGCCAGAAAAGGAAAGCTGGACTGTCAATGATATACTAGAAGTTAGTGGAAAATT  
AAATTGGGCCAGTCAGATTACCCAGGAATTAAAGTAAGGCAACTTTGTAACCTCCT  
TAGGGGGGCCAAAGCACTAACAGATATAGTACCAACTGAAGAACAGAATTAG  
AATTGGCAGAGAACAGGGAAATTCTAAGAGAACAGTACATGGAGTATTATGAC  
CCATCAAAAGACTTGGTAGCTGAAATACAGAAACAGGGGATGACCAATGGACATA  
TCAAATTACCAAGAACCAATTCAAAAACCTGAAAACAGGGAAAGTATGCAAAAATGA  
GGACTGCCACACTAATGATGTTAAACAGTTAACAGAGGCAGTGCAAAAAATAGCT  
ATGGAAAGCATAGTAATATGGGAAAGACTCCTAAATTAGACTACCCATCCAAA  
AGAAACATGGGAGACATGGTAGACAGACTATTGGCAAGCCACCTGGATTCTGAGT  
GGGAGTTGTTAATACCCCTCCCTAGTAAAATTATGGTACCAAGCTAGAGAAAGAAC  
CCATAATAGGAGCAGAAACTTCTATGTAGATGGAGCAGCTAATAGGAAACTAAA  
ATAGGAAAAGCAGGGTATGTTACTGACAGAGGAAGGCAGAAAATTGTTCTCTAAC  
AGAAACAAACAAATCAGAAGACTGAATTACAAGCAATTCAAGCTAGCTTGCAGATT  
AGGATCAGAAGTAAACATAGTAACAGACTCACAGTATGCATTAGGAATCATTCAAG  
CACAACCAAGATAAGAGTGAATCAGAGTTAGTCACCAAAATAATAGAACAAATTAAATA  
AAAAAGGAAAAGGTCTACCTGTATGGGTACCAAGCACATAAGGAATTGGAGGAAA  
TGAACAAATAGATAAAATTAGTAAGTAAGGAAATCAGGAAAGTGCTTTCTAGATG  
GAATAGAT

FIGURE 13

**SEQ ID NO:36**

GGCGGCATCGT GATCT ACCAGTACATGGACGACCTGTACGTGGCAGCGGCG  
GC

**FIGURE 14**

**SEQ ID NO: 37**

GGIVIYQYMDDLYVGSGG

**FIGURE 15**

TGGAAGGGTTAATTACTCCAGGAAAAGGCAAGAGATCCTGATTATGGGTCTATC  
ACACACAAGGCTACTTCCCTGATTGGCAAAACTACACACCCGGGACCAGGGTCAGA  
TATCCACTGACCTTGGATGGTCTCAAGCTAGTGCAGTGACCCAAAGGAAGTA  
GAAGAGGCCAACGGAGGAGAAGACAACAGTGTACAGTGGAAAGTTGACAGCAGCCTAGCAC  
GCAGACACCTGGCCCGCGAGCTACATCCGGATTATTACAAAGACTGCTGACACAGA  
AGGGACTTTCCGCCTGGGACTTCCACTGGGGCGTCCAGGGGGAGTGGTCTGGCG  
GGACTGGAGTGGCCAGCCCTCAGATGCTGCATATAAGCAGCGGCTTCGCCTGTA  
CTGGGTCTCTAGGTAGACCAGATCCGAGCCTGGAGCTCTGTCTATCTGGGA  
ACCCACTGCTTAGGCCTCAATAAAAGCTGCCTGAGTGTCTAAGTAGTGTGTGCC  
ATCTGTTGTGACTCTGGTAACCTGGTAACTAGAGATCCCTCAGACCCTTGTGGT  
AGTGTGGAAAATCTCTAGCAGTGGCGCCGAACAGGGACTGAAAGCGAAAGTGAG  
ACCAGAGAAGATCTCTCGACGCAGGACTCGGCTGCTGAAGTGCACTCGGCAAGAG  
GCGAGGGGGCGACTGGTAGTACGCCAAAATTTTTGACTAGCGGAGGCTAGA  
AGGAGAGAGATGGTGCAGAGCGTCAATATTAAGAGGGGGAAAATTAGACAAAT  
GGGAAAAAAATTAGGTTACGCCAGGGGGAGAAAACACTATATGCTAAAACACCTA  
GTATGGCAAGCAGAGAGCTGGAAAGATTGCAAGTTAACCTGGCTTTAGAGAC  
ATCAGACGGATGTAGAC AAATAATAAAACAGCTACAACAGCTCTCAGA  
CAGGAACAGAGGAAATTAGATCATTATTAACACAGTAGCAACTCTCTATTGTGTAC  
ATAAAGGGATAGATGTACGAGACACCAAGGAAGCCTTAGACAAGATAAGGAGGA  
ACAAAACAAATGTCAGAAAAAACACAGCAGGCCAGCGCTGACAAAAAGGTC  
AGTAAAATTATCCTATAGTCAGAACCTCAAGGGCAAATGGTACACCAGGCCAT  
ATCACCTAGAACCTTGAATGCATGGTAAAAGTAATAGAGGAGAAGGCTTTAGCC  
CAGAGGTAAATACCCATGTTACAGCATTATCAGAAGGAGCCACCCACAAGATT  
AACACCATGTTAAATACAGTGGGGGACATCAAGCAGCCATGCAAATGTTAAAG  
ATACCATCAATGAGGAGGCTGCAGAATGGTAGGTTACATCCAGTACATGCAGGG  
CCTGTTGCACCAGGCCAGATGAGAGAACCAAGGGGAAGTGACATAGCAGGAAC  
CTAGTACCCCTCAAGAACAAATAGCATGGATGACAAGTAACCCACCTATCCCAGTA  
GGGGACATCTATAAAAGGTGGATAATTCTGGGTTAAATAAAATAGTAAGAATGTA  
CAGCCCTGTCAGCATTAGACATAAAACAAGGCCAAAGGAACCCCTTAGAGACT  
ATGTAGACCGGTTCTCAAAACTTAAGAGCTGAACAATCTACACAAGAGGTAAA  
AATTGGATGACAGACACCTTGTAGTCCAAAATGCGAACCCAGATTGTAAGACCATT  
TTAAGAGCATTAGGACCAGGGCTCATTAGAAGAAATGATGACAGCATGTCAGGG  
AGTGGGAGGACCTAGCCACAAAGCAAGAGTTGGCTGAGGCAATGAGCCAAGCAA  
ACAATACAAGTGTAAATGATACAGAAAAGCAATTAAAGGCCCTAGAAGAGCTGTT  
AAATGTTCAACTGTGGCAGGGCACATAGCCAGGAATTGCAGGGCCCTAG  
GAAAAGGGCTGTTGGAAATGTGGAAAGGAAGGACACCAAATGAAAGACTGTACT  
GAGAGGCAGGCTAATTAGGGAAAATTGGCCTCCACAAGGGAGGCCAGG  
GAATTTCCTTCAGAGCAGCCAGAGCAACAGCCCCACCACTAGAACCAACAGCCC  
CACCAAGCAGAGAGCTTCAAGTTCAAGGAGACTCCGAAGCAGGAGGCCAAAGACAG  
GGAACCTTAACCTCCCTCAAATCACTCTTGGCAGCGACCCCTGTCTCAATAAAA

FIGURE 16

GTAGCGGGCAAACAAAGGAGGCTTTAGATACAGGAGCAGATGATACTACT  
AGAAGAAATAAACTGCCAGGAAAATGGAAACCAAAAATGATAGGAGGAATTGGA  
GGTTTATCAAAGTAAGACAGTATGATCAAATACTTATAGAAATTGTGGAAAAAGG  
GCTATAGGTACAGTATTAGTAGGACCTACACCTGTCAACATAATTGGAAGAAATCTG  
TTGACTCAGCTGGATGCACACTAAATTCCAATTAGCCCCATTGAAACTGTACCA  
GTAAAATTAAAGCCAGGAATGGATGGCCAAAGGTTAACAAATGGCCATTGACAGA  
AGAAAAAAATAAAAGCATTAACAGAAATTGTGAGGAAATGGAGAAGGAAGGAAAAA  
ATTACAAAAATTGGGCCTGAAAATCCATATAACACTCCAGTATTGCCATAAAGAAG  
AAGGACAGTACAAAGTGGAGAAAATTAGTAGATTTCAGGGAACTCAATAAAAGAAC  
TCAAGACTTTGGGAAGTCCAATTAGGAATACCACACCCAGCAGGGTTAAAAAAGA  
AAAAATCAGTGACAGTACTGGATGTGGAGATGCATATTTCAGTCCTTAGATG  
AGAGCTTCAGAAAATATACTGCATTACCATACCTAGTATAAACAAATGAAACACCA  
GGGATTAGATATCAATATAATTGTTCTCACAGGGATGGAAAGGATCACCAGCAA  
TATTCCAGAGTAGCATGACAAGAATCTTAGAGCCCTTAGAACACAAAACCCAGAA  
GTAGTTATCTATCAATATGGATGACTTATATGTAGGATCTGACTTAGAAATAGGG  
CAACATAGAGAAAAATAGAGGAGTTAACAGGACACCTATTGAAATGGGATTAC  
CACACCAGACAAGAACATCAGAAAGAACCCCCATTCTTGATGGGTATGAAC  
TCCATCCTGACAAATGGACAGTACAGCCTATACAGCTGCCAGAAAAGGAGAGCTGG  
ACTGTCAATGATATACAGAAGTTAGTGGAAAGTTAAACTGGCAAGTCAGATTAA  
CCCAGGGATTAAAGTAAGGCAACTGTGTAAACTCCTTAGGGGAGCCAAAGCACTAA  
CAGACATAGTGCCACTGACTGAAGAACAGAATTAGAATTGGCTGAGAACAGGGA  
AATTCTAAAAGAACCAAGTACATGGAGTATATTGACCCATCAAAAGATTAAATAG  
CTGAAATACAGAAACAGGGGAATGACCAATGGACATATCAAATTACCAAGAAC  
ATTAAAAATCTGAGAACAGGAAAGTATGCAAAATGAGGACTGCCACACTAATG  
ATGTGAAACAGTTAGCAGAGGCAGTGCAAAAGATAACCCAGGAAAGCATAGTAATA  
TGGGGAAAAACTCCTAAATTAGACTACCCATCCAAAAGAACATGGGAGACATG  
GTGGTCAGACTATTGGCAAGCCACCTGGATTCTGAGTGGAGTTGTCAATACCCC  
TCCCCTAGTAAAATTGTGGTACCAAGCTGGAAAAAGAACCCATAGTAGGGCAGAAA  
CTTCTATGTAGATGGAGCAGCCAATAGGGAAACTAAAATAGGAAAAGCAGGGTAT  
GTCACTGACAAAGGAAGGCAGAAAGTTGTTCTTCACTGAAACAACAAATCAGAA  
GAATGAATTACAAGCAATTCACTAGCTAGCTTGCAAGGATTAGGCCAGAACAGTAAACA  
TAGTAACAGACTCACAGTATGCATTAGGAATCATTCAAGCACAACCAGATAAGAGT  
GAATCAGAATTAGTCAGTCAAATAATAGAACAGTTGATAAAAAGGAAAAAGTCTA  
CCTATCATGGGTACCAAGCACATAAGGAATTGGAGGAAATGAACAAGTAGACAAAT  
TAGTAAGTAGTGGAAATCAGAAAAGTACTGTTCTAGATGGAATAGATAAAAGCTAA  
GAAGAGCATGAAAATATCACAGCAATTGGAGAGCAATGGCTAGTGAGTTAATCT  
GCCACCCATAGTAGCAAAGGAAATAGTAGCCAGCTGTGATAATGTCAGCTAAAAG  
GGGAAGCCATGCATGGACAAGTCAGTGTAGTCCAGGAATATGGCAATTAGACTGT  
ACACATTAGAAGGAAAATCATCCTAGTAGCAGTCCATGTAGCCAGTGGCTACAT  
GGAAGCAGAGGTTATCCCAGCAGAACAGGACAAGAACAGCATACTTATACTAA  
AATTAGCAGGAAGATGCCAGTCAAAGTAATACATACAGATAATGGCAGTAATTTC  
ACCACTACCGCAGTTAAGGCAGCCTGTTGGTGGCAGATATCCAACGGGAATTGG  
AATTCCCTACAATCCCCAAAGTCAAGGAGTAGTGAATCCATGAATAAAGAATTAA

FIGURE 16

AGAAAATCATAGGGCAAGTAAGAGATCAAGCTGAGCACCTAACAGACAGTACAA  
ATGGCAGTATTCAATTACAATTTAAAAGAAAAGGGGGGATTGGGGGTACAGTGC  
AGGGGAGAGAATAATAGACATAATAGCATCAGACATAACAAACTAAAGAATTACAAA  
AACAAATTATAAAAATTCAAAATTTGGGTTATTACAGAGACAGCAGAGACCTA  
TTTGGAAAGGACCAGCCAAACTACTCTGGAAAGGTGAAGGGGCAGTAGTAATACAA  
GATAATAGTGTATAAAGGTAGTACCAAGAAGGAAAGCAAAATCATTAAGGACTA  
TGGAAAACAGATGGCAGGTGCTGATTGTGTGGCAGGTAGACAGGATGAAGATTAGA  
ACATGGCACAGTTAGTAAAGCACCATACTGTATGTTCGAGGAGAGCTGATGGATGG  
TTCTACAGACATCATTATGAAAGCAGACACCCAAAAGTAAGTCAGAAGTACACAT  
CCCATTAGGAGATGCCAGGTTAGTAATAAAAACATATTGGGGTCTGCAGACAGGAG  
AAAGAGCTTGGCATTGGTCACGGAGTCTCCATAGAATGGAGATTGAGAAGATAT  
AGCACACAAGTAGACCCCTGACCTGACAGACCAACTAATTCAATATGCATTATTTGAT  
TGTTTGCAGAATCTGCCATAAGGAAAGCCATACTAGGACAGATAGTTAGCCCTAA  
GTGTGACTATCAAGCAGGACATAACAAGGTAGGATCTCTACAATACTTGGCACTGA  
CAGCATTGATAAAACCAAAAAAGATAAAGCCACCTCTGCCTAGTGTAGGAAATT  
GTAGAGGATAGATGGAACAAGCCCCAGAAGACCAGGGGCCAGAGGGAACATA  
CAATGAATGGACACTAGAGCTTTAGAAGAACTCAAGCAGGAAGCTGTCAGACACT  
TTCCTAGACCATGGCTCCATAACTTAGGACAACATATCTATGAAACCTATGGAGATA  
CTTGGACAGGAGTTGAAGCAATAATAAGAATCCTGCAACAATTACTGTTATTCA  
TCAGGATTGGGTGCCATCATAGCAGAATAGGCATTGCGACAGAGAACAGCAAGA  
AATGGAGCCAATAGATCCTAACCTAGAACCCCTGGAACCATCCAGGAAGTCAGCCTA  
AAACTGCTTGTAAATGGGTGTTACTGTAAACGTTGCAGCTATCATTGTCTAGTTGCTT  
TCAGAAAAAAGGCTAGGCATTACTATGGCAGGAAGAACGGAGACAGCGACGAA  
GCGCTCCTCCAAGCAATAAGATCATCAAGATCCTCTACCAAAAGCAGTAAGTACCG  
AATAGTATATGTAATGTTAGATTAACTGCAAGAATAGATTCTAGATTAGGAATAGG  
AGCATTGATAGTAGCACTAATCATAGCAATAATAGTGTGGACCATACTATATAG  
AATATAGGAAATTGTAAGGCAAAGGAAAATAGACTGGTTAGTTAAAGGATTAGG  
GAAAGAGCAGAAGACAGTGGCAATGAGAGCGAGGGGACTGAAGAATTATCGA  
CACTGGGGATATGGGCATCTTAGGCTTGGATGCTAATGATGTGTAAATGTGAA  
GGGCTTGTGGTCACAGTCTACTACGGGGTACCTGTGGGAGAGAACGAAACT  
ACTCTATTTGTGCATCAGATGCTAAAGCATATGAGAAAGAAGTCATAATGTCTG  
GGCTACACATGCCTGTACCCACAGACCCAAACCCACAAGAAGTGTATTGGC  
AATGTAACAGAAAATTAAACATGTGGAAAATGACATGGGATCAGATGCAGG  
AAGATATAATCAGTTATGGGATCAAAGCCTTAAGCCATGTGTAAAATTGACCCA  
CTCTGTGTCACTTAAACTGTACAATGCAACTGTTACTACAATAACCTCTAAA  
GACATGAAAAAATTGCTTTCTATGTAACCACAGAATTAAGAGATAAGAAAAAGAA  
AGAAAATGCACTTTTATAGACTGATAGTACCACTTAATAATAGGAAGAATGG  
GAATATTAAACAACATAGATTAATAAAATTGTAATACCTCAGCCATAACACAGCCTG  
TCCAAAAGTCTGTTGACCCATTCTACATTATTGTGCTCCAGCTGGTATGCG  
CCTCTAAAATGTAATAATAAGAAAATTCAATGGAATAGGACATGCGATAATGTCAG  
CACAGTACAATGTACACATGGAATTAGCCAGTGGTACACTCAATTACTGTTAAA  
TGGTAGCCTAGCAGAAGAAGAGATAATAATTAGATCTGAAAATCTGACAAACAATG  
TCAAAACAATAATAGTACATCTTAATGAATCTATAGAGATTAAATGTACAAGACC

FIGURE 16

TGGCAATAATACAAGAAAGAGTGTGAGAATAGGACCAGGACAAGCATTCTATGCA  
ACAGGAGACATAATAGGAGATATAAGACAAGCACATTGTAACATTAGTAAAAATGA  
ATGGAATACAACCTTACAAAGGGTAAGTCAAAATTACAAGAACTCTTCCCTAATA  
GTACAGGGATAAAATTGCAACCACACTCAGGAGGGGACCTAGAAATTACTACACAT  
AGCTTAATTGGGAGGAGAATTTCATTGCAATACAACAGACCTGTTAATAGT  
ACATACAGTAATGGTACATGCACTAATGGTACATGCATGTCTAATAATACAGAGCG  
CATCACACTCCAATGCAGAATAAAACAAATTATAACATGTGGCAGGAGGTAGGAC  
GAGCAATGTATGCCCTCCCATTGCAAGGAAACATAACATGTAGATCAAATATTACA  
GGACTACTATTAACACGTGATGGAGGAGATAATAACTGAAACAGAGACATTAG  
ACCTGGAGGAGGAGACATGAGGGACAATTGGAGAAGTGAATTATATAAATACAAG  
GTGGTAGAAATTAAACCATTAGGAGTAGCACCCTGCTGCAAAAAGGAGAGTGGT  
GGAGAGAGAAAAAGAGCAGTAGGAATAGGAGCTGTGTCCTGGTTCTGGAG  
CAGCAGGAAGCACTATGGCGCAGCATCAATAACGCTGACGGTACAGGCCAGACAA  
TTATTGTCGGTATAGTCAACAGCAAAGTAATTGCTGAGGGCTATAGAGGCGCAA  
CAGCATATGTTGCAACTCACGGTCTGGGCATTAAGCAGCTCCAGGCAAGAGTCCTG  
GCTATAGAGAGATACTACAGGATCAACAGCTCCTAGGACTGTGGGCTGCTCTGG  
AAAACTCATCTGCACCACTAATGTGCTTGGAACTCTAGTTGGAGTAATAAAACTCA  
AAAGTGTATTTGGATAACATGACCTGGATGCAGTGGATAGGAAATTAGTAATT  
ACACAAACACAATATACAGGTTGCTGAAGACTCGCAAAGCCAGCAGGAAAGAAA  
TGAAAAAGATTACTAGCATTGGACAGGTGGAACAATCTGTGGAATTGGTTAGCAT  
AACAAATTGGCTGTGGTATATAAAATATTATAATGATAGTAGGAGGCTTGATAG  
GTTAAGAATAATTTGCTGTGCTCTCTAGTAAATAGAGTTAGGCAGGGATACT  
CACCTTGTCTTGACACTTGCTGGACGACCTACGAAGCCTGTGCTCTGCTTAC  
GGAATCGAAGAAGAAGGTGGAGAGCAAGACAGCAGCAGATCCATTGATTAGTGA  
GCGGATTCTTGACACTTGCTGGACGACCTACGAAGCCTGTGCTCTGCTTAC  
ACCGATTGAGAGACTTCATATTAAATTGTTAGTGAAGAGCAGTGGAACTCTGGACAC  
AGTAGTCTCAGGGACTGCAGAGGGGGGGGGAAACCTTAAGTATTGGGAGTCT  
TGTGCAATATTGGGTCTAGAGTAAAAAGAGTGTCTTAAATCTGCTTGATACTAT  
AGCAATAGCAGTAGCTGAAGGAACAGATAGGATTCTAGAATTCTACACAAACCTT  
GTAGAGGTATCCGCAACGTACCTAGAAGAATAAGACAGGGCTCGAACGAGCTTG  
CAATAAAATGGGGGGCAAGTGGCAAAAAGCAGTATAATTGGATGGCCTGAAGTAA  
GAGAAAGAATCAGACGAACACTAGGTAGCAGCAGAGGGAGTAGGATCAGCGTCTCA  
AGACTTAGAGAAACATGGGCACCTACAACCAACAGCAACACAGCCCACAACAATGCTG  
CTTGCCTGGCTGGAAAGCGCAAGAGGGAGAAGTAGGCTTCCAGTCAG  
CCTCAGGTACCTTAAGACCAATGACTTAAAGCAGCAATAGATCTCAGCTTCTT  
TTAAAAGAAAAGGGGGACTGGAAGGGTTAATTACTCCAAGAAAAGGCAAGAGAT  
CCTTGATTGTGGTTATAACACACAAGGCTTCTCCCTGATTGGCAAAACTACAC  
ACCGGGACCAGGGGTAGATTCCACTGACCTTGGATGGTACTCAAGCTAGAGCC  
AGTCGATCCAAGGGAAAGTAGAAGAGGCCAATGAAGGAGAAAACAATGTTACTAC  
ACCCTATGAGCCAGCATGGAATGGAGGATGAAGACAGAGAAGTATTAGATGGAAG  
TTTGACAGTACGCTAGCACGAGACACATGGCCCGAGCTACATCCGGAGTATTAC  
AAAGACTGCTGACACAGAAGGGACTTCCGCTGGACTTCCACTGGGGCGTCCAG  
GAGGTGTGGTCTGGCGGGACAGGGAGTGGTCAGCCCTGAGATGCTGCATAAAG  
CAGCTGCTTTCGCCTGACTGGGTCTCTAGGTAGACAGATCTGAGGCCGGAG

FIGURE 16

CTCTCTGGCTATCTAGGAAACCACTGCTTAAGCCTAATAAAGCTTGCCTTGAGTG  
CCTTGAGTAGTGTGTGCCGTCTGTTGACTCTGGTAAGTAGAGATCCCTCAGA  
CCACTTGTGGTAGTGTGGAAAATCTCTAGCA

**FIGURE 16**